Appendix A

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- <model name="FieldKorosNoyesModel">
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<h1>Field-Koros-Noyes Model of BZ Reaction</h1>
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- <thead>
- <tr>
<th align="left" valign="middle" bgcolor="#eeeeee">Citation</th>
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</thead>
- <tbody>
- <tr>
- <td>
R.J.Field and R.M.Noyes,J.Chem.Phys.60,1877 (1974) ;
R.J.Field,E.Koros,R.M.Noyes,JACS 94,8649 (1972);R.J.Field, R.M.Noyes,Nature
237,390 (1972) This implementation is taken manufactured by J.D. Murray,
"Mathematical Biology" (1989) page 181.
<a href="" />
</td>
</tr>
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</table>
- <table border="0" cellspacing="0" cellpadding="2">
<thead>
- <tr>
<th align="left" valign="middle" bgcolor="#eeeeee">Description</th>
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- <tr>
<td>Field Noyes Version of Belousov- Zhabotinsky Reaction. BrO3 is held
constant; HOBr is typically ignored, and can be replaced by an empty- set. The
stoichiometry f is typically taken as 1/ 2 or 1 (denominator 1 or 2 in SBML)
.</td>
</tr>
</tbody>
</table>
- <table border="0" cellspacing="0" cellpadding="2">
<thead>
- <tr>
<th align="left" valign="middle" bgcolor="#eeeeee">Rate constant </th>
<th align="left" valign="middle" bgcolor="#eeeeee">Reaction</th>
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- <tbody>
- <tr>
<td>k1 = 1.3</td>
<td>Br + BrO3 -> HBrO2 + HOBr</td>
</tr>
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- <tr>
  <td>k2 = 2000000</td>
  <td>Br + HBrO2 -> HOBr^2</td>
    </tr>
- <tr>
  <td>k3 = 34</td>
  <td>BrO3 + HBrO2 -> Ce^2 + HBrO2^2</td>
    </tr>
- <tr>
  <td>k4 = 3000</td>
  <td>HBrO2^2 -> BrO3 + HOBr</td>
    </tr>
- <tr>
  <td>k5 = 0.02</td>
  <td>Ce -> Br^f</td>
    </tr>
    </tbody>
    </table>
- <table border="0" cellspacing="0" cellpadding="2">
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- <tr>
  <th align="left" valign="middle" bgcolor="#eeeeee">Variable</th>
  <th align="left" valign="middle" bgcolor="#eeeeee">IC  </th>
  <th align="left" valign="middle" bgcolor="#eeeeee">ODE</th>
    </tr>
    </thead>
- <tbody>
- <tr>
  <td>Br</td>
  <td>0.003</td>
  <td>Br'[t] == -(k1*Br[t]*BrO3[t]) + f*k5*Ce[t] -  k2*Br[t]*HBrO2[t]</td>
    </tr>
- <tr>
  <td>Ce</td>
  <td>0.05</td>
  <td>Ce'[t] == -(k5*Ce[t]) + 2*k3*BrO3[t]*HBrO2[t]</td>
    </tr>
- <tr>
  <td>HBrO2</td>
  <td>0.001</td>
  <td>HBrO2'[t] == k1*Br[t]*BrO3[t] - k2*Br[t]*HBrO2[t] +
     k3*BrO3[t]*HBrO2[t] - k4*HBrO2[t]^2</td>
    </tr>
- <tr>
  <td>HOBr</td>
  <td>0</td>
  <td>HOBr'[t] == k1*Br[t]*BrO3[t] + 2*k2*Br[t]*HBrO2[t]
     + k4*HBrO2[t]^2</td>
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    </tbody>
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